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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/559,394

04/17/2006

Keith Mangnall

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EXAMINER

DWIVEDI, VIKANSHA S

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

09/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/559,394	Applicant(s) MANGNALL ET AL.	
	Examiner VIKANSHA S. DWIVEDI	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/5/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the air outlet must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not clear what applicant means by the term "air-outlet".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Finger et al. (U.S. Patent number 6,435,167) in view of Lee et al. (U.S. Patent number 6,382,912) in further view of Bosley et al. (U.S. patent number 5,873,235).

Finger et al. discloses a sewage aeration turbocompressor for continuously delivering air to a sewage sludge treatment plant comprising: a compressor (Figure 2) having a housing (inherent), an impeller (13) mounted on an impeller shaft (19) within the housing, and an electric motor having an output shaft coupled to and rotating in synchronism with the impeller shaft (inherent, background and summary of invention), the housing defining an axial air inlet (11) extending to the impeller (13), a diffuser passageway (32) extending radially outwards from the impeller (13), and a volute (not numbered but clearly shown in figure 2) extending from the diffuser to an air outlet (Figure 2); wherein the diffuser is an annular passageway of uniform width in the axial direction (Figure 2). Lee et al. discloses a compressor 10 having a power driven input shaft 12 connected to an impeller 14 supported for rotation about an axis 16 within an outer cylindrical housing 18 within which a vaneless diffuser 20 is fixedly mounted in operative relation to the rotatable impeller 14 and a stationary tubular inlet section 22 of the compressor 10. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Finger et al. in view of Lee et al. as a known choice for diffuser. Bosley et al. discloses a variable speed permanent magnet motor controlled by an inverter, the motor is deigned to drive the compressor at speeds within a range

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limited by maximum and minimum design speeds (Summary of invention). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Finger et al. in view of Lee et al. and further in view of Bosley et al. to control the compressor. With regard to claim limitation that the vaneless diffuser designed to deliver a pressure rise between the inlet and outlet of not more than 1500 millibar when the motor is driven at the maximum design speed, and the compressor is designed to deliver maximum efficiency when the motor is driven at a speed less than the maximum design speed; wherein the compressor is designed to deliver a pressure rise of between 850 millibar when the motor is driven at the minimum design speed and 1200 millibar when the motor is driven at the maximum design speed; Finger et al. in view of Lee et al. and The pressure range is a results effective variable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to find these optimum ranges since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Finger et al. (U.S. Patent number 6,435,167) in view of Lee et al. (U.S. Patent number 6,382,912) in view of Bosley et al. (U.S. patent number 5,873,235) and further in view of Lucido et al. (U. S. Patent number 6488852).

Finger et al. in view of Lee et al. in view of Bosley et al. teach the claimed invention except a oxygen sensor. Lucido et al. teaches a oxygen sensor that provides oxygen concentration information to the controller. It would have been obvious to one

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having ordinary skill in the art at the time the invention was made to incorporate a oxygen sensor to maintain oxygen supply to the system (Detailed description).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VIKANSHA S. DWIVEDI whose telephone number is (571)272-7834. The examiner can normally be reached on M-F, 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

VSD